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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ralf Salameh

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EXAMINER

LEUNG, KA CHUN A

ART UNIT

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3747

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/501,817	Applicant(s) SALAMEH, RALF	
	Examiner Ka Chun Leung	Art Unit 3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2008 and 01 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-15, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-15, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to Applicant's amendment filed on 03/26/2008 and Request for Continued Examination (RCE) filed on 05/01/2008.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/01/2008 has been entered.

Claim Objections

3. Claim 9 is objected to because of the following informalities: Lines 2-3 can be properly read as "a carrier element having a generally planar bottom surface...and an opening in said carrier element" but also improperly read as "positioned in direct abutment against a mating component and an opening...". It is suggested that the term 'having' be inserted such that it reads:

-- and having an opening in said carrier element --
in order to provide greater clarity. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 9-15, 17 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

6. Regarding base Claim 9, the claim recites the limitation of providing an “axial sealing lip extending in one direction axially outward from said planar bottom surface” which is not described in the written disclosure.

7. Regarding Claim 17, the claim recites the limitation “wherein said radial sealing lip is substantially radially aligned with said planar bottom surface of said carrier element” which is not described in the written disclosure.

8. Regarding Claim 18, the claim recites the limitation “wherein a wave shaped fusion zone extends coplanar with said planar bottom surface of said carrier element” which is not described in the written disclosure.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding Claim 17, the phrase "substantially" renders the claim indefinite because it is unclear what ranges of alignment is considered to be "substantially radially aligned". Presently the above term has been interpreted to be an alignment that includes offset within the general vicinity.

Claim Rejections - 35 USC § 103

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Antonini et al

12. Claims 9-13, 17 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Antonini et al (US Patent 4,588,195). Antonini et al discloses a floating lip seal assembly with convoluted flexible section comprising an outer body (38) positioned against a bore (40) and a flexible body portion (12) attached to the axially extending inside annulus (34) of the outer body (38). Note that the radially extending annulus (36) has been interpreted as a "bottom surface". Both the radially extending annulus (36) and the extending outer body (38), which are part of the metallic case (14), are installed adjacent to the bore (40) and thus meets the limitation of being "positioned against a mating component". Furthermore, the flexible body portion that is molded (16) can be

considered as an "axial sealing lip". The molded portion (16) inherently provides a sealing effect since it is molded to inside annulus (34) and allows axial movement of the seal while still providing a sealing action with the extending annulus (36). Additionally, the flexible body portion (12) including the sealing lip (20) extends generally inwardly with respect to the radially extending annulus. Figure 1 depicts the molded portion (16) extending to the bottom surface of the radially extending annulus (36) and the thickness of the molded part on the bottom surface can be interpreted as extending away from the "bottom part". However Antonini et al does not disclose providing an "axial sealing lip extending in one direction axially outward from said planar bottom surface" (emphasis added).

13. It would have been an obvious matter of design choice to make the different portions of the axial sealing lip of whatever form or shape was desired or expedient. A change in form or shape is generally recognized as being within the level of ordinary skill in the art, absent any showing of unexpected results. *In re Dailey et al.*, 149 USPQ 47.

14. Specifically regarding Claim 10, the region with the first reverse bend (28) and second reverse bend (32) has been interpreted as a "fusion zone" since it is located between the "axial sealing lip", defined by flexible body portion (12) surrounding the inside annulus (34), and the "radial sealing lip" defined by sealing lip (20).

15. Specifically regarding Claim 11, the inside annulus (34) contains an axially angled region.

16. Specifically regarding Claim 12, the first reverse bend (28) and second reverse bend (32) forms a tapered region molded in a wavelike manner.

17. Specifically regarding Claim 13, a garter spring (24) is mounted annularly about the sealing lip (20) as shown in Figure 1.

18. Specifically regarding Claim 17, the "radial sealing lip" defined by sealing lip (20) would inherently be "substantially radially aligned" with the carrier element especially when the shaft is in a neutral position or when no shaft is installed. Given the broadest reasonable interpretation, Figure 1 of Antonini et al could be considered as "substantially radially aligned" since the Specification does not distinctly disclose the range that it encompasses.

19. Specifically regarding Claim 18, the first reverse bend (28) and second reverse bend (32) extend generally in the horizontal direction in order to allow the sealing lip (20) to contact the shaft. The two bends form a wave shaped zone which "generally extends coplanar" with the extending annulus since it extends "generally" in a horizontal direction as depicted in Figure 1.

Antonini et al and Phelps et al

20. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Antonini et al (US Patent 4,588,195) in view of Phelps et al (US Patent 4,021,049).

21. Antonini et al discloses a floating lip seal assembly with convoluted flexible section comprising an outer body (38) positioned against a bore (40) and a flexible body portion (12) attached to the axially extending inside annulus (34) of the outer body (38).

Antonini et al further discloses a garter spring (24) is mounted annularly about the sealing lip (20). However, Antonini et al does not disclose the use of a rigid ring in place of the garter spring.

22. Phelps et al discloses a lip type seal for a crankshaft comprising a seal assembly (10) with a lip seal (22) and a metal retainer ring (28) that circumscribes the lip seal at a point radially inward of the lip portion (24).

23. Because both Antonini et al and Phelps et al teach lip seals for a rotary shaft including a retaining means mounted annularly about the lip seal, it would have been obvious to one of ordinary skill in the art to substitute one retaining means for another to achieve the predictable results of securing the lip seal against the shaft.

Antonini et al, Phelps et al, and Phillips et al

24. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Antonini et al (US Patent 4,588,195) and Phelps et al (US Patent 4,021,049) as applied to Claim 14 above, and further in view of Phillips et al (US Patent 6,527,276)

25. Antonini et al discloses a floating lip seal assembly with convoluted flexible section comprising an outer body (38) positioned against a bore (40) and a flexible body portion (12) attached to the axially extending inside annulus (34) of the outer body (38). Antonini et al further discloses a garter spring (24) is mounted annularly about the sealing lip (20). Phelps et al discloses a lip type seal for a crankshaft comprising a seal assembly (10) with a lip seal (22) and a metal retainer ring (28) that circumscribes the

lip seal at a point radially inward of the lip portion (24). However, neither reference discloses a rigid ring molded in the fluid seal.

26. Phillips et al discloses a sealing system for a gear reducer comprising a shaft (12), a double lip seal (66a), and a biasing element (74a). Phillips et al further discloses that the biasing element (74a) "is embedded within the lip seal to bias lip 68a into tight engagement about shaft 12".

27. It is also known in the art to embed a biasing element into the seal itself to prevent contact between the biasing element and the fluid being sealed and additionally has the benefit of minimizing thermal expansion of the biasing element (particularly if it is metallic) by insulating it complete with the seal material. For example see US Patent 4,449,717, Col. 2, Lines 62-68.

28. Thus it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided the metal retainer ring of Antonini et al and Phelps et al embedded within the lip seal, in light of the teachings of Phillips et al, in order to provide lip seal with a tight engagement against the shaft and to isolate the biasing element from the environment.

Response to Remarks/Arguments

29. Applicant's arguments with respect to Claims 9-15, 17 and 18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ka Chun Leung whose telephone number is (571)272-9963. The examiner can normally be reached on 7:30AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Cronin can be reached on (571) 272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ka Chun Leung/
Examiner, Art Unit 3747

/Stephen K. Cronin/
Supervisory Patent Examiner, Art Unit 3747